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Non-ST-elevation acute myocardial infarction with normal coronary arteries: predictors and prognosis

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Introduction and objectives: Occasionally, coronary arteries without significant stenosis are observed during invasive treatment of acute non-ST-elevation myocardial infarction (NSTEMI). The aim was to investigate predictive factors and prognosis in these patients.

Methods: The study involved 165 patients admitted for NSTEMI who underwent cardiac catheterization. The primary end-point was the observation of coronary arteries without significant stenosis, and the secondary end-point was death or myocardial infarction within a median of 2 years.

Results: Overall, 21 patients (13%) had coronary arteries without significant lesions. The predictors were: female sex (odds ratio [OR] = 6.4; P=.0001), age <55 years (OR=3.2; P=.001), and the absence of diabetes (OR=2.8, P=.0001), previous antiplatelet treatment (OR=3.9, P=.0001).
The composite variable of female sex plus at least 2 additional predictive factors had a specificity of 89% and a sensitivity of 63% for coronary angiography showing no significant stenosis. The absence of coronary artery stenosis decreased the probability of death or myocardial infarction during followup (hazard ratio = 0.3, 95% confidence interval, 0.2-0.9; P=.03).

Conclusions: In NSTEMI, female sex, age <55 years and the absence of diabetes, previous antiplatelet treatment were all associated with coronary angiography showing no significant stenosis. The longterm prognosis in these patients was good.

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Heart rate recovery after exercise and long-term prognosis in Algerian patients with coronary artery disease

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Background: The long-term prognostic value of heart rate recovery (HRR) has been incompletely documented in patients with coronary artery disease (CAD). We sought to confirm the prognostic value of HRR in Algerian cohort with stable CAD.

Methods: We identified 655 patients with baseline exercise stress testing data. HRR was measured at 3 minutes post exercise during a passive recovery. Clinical outcomes were evaluated according to HRR in both threshold and continuous models.

Results: Median long-term follow-up was 3.7 years. HRR < 45 beats per minute (Bpm) most appropriately differentiated non survivors from survivors and was associated with an increased risk of all-cause death (adjusted hazard ratio = 1.17; P =0.001). Increasing HRR was associated with a lower risk of all-cause (adjusted hazard ratio = 0.93 per 10 Bpm;) and cardiovascular (CV) mortality (adjusted hazard ratio =0.94 per 10 Bpm;).

Conclusions: HRR at 3 minutes independently predicts long-term allcause and CV mortality in patients with stable CAD. Measurement of HRR at 3 minutes during passive recovery can be used as a complementary tool to identify patients with a higher total and CV risk.

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Validation and recalibration of the Systematic coronary risk evaluation (SCORE) in a coronary Tunisian population

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Purpose: Development of a validated risk prediction model for cardiovascular death in coronary patients is a high priority for strategies of therapy. We sought to validate and recalibrate of the SCORE (Systematic coronary risk evaluation) risk chart based on Tunisian national mortality data and average major cardiovascular risk factor levels.

Methods: Baseline data were collected between 1997 and 2004 in 146 male patients aged 52.4 ± 9 years hospitalized with STEMI treated with fibrinolysis in 68 % of patients and not revascularized early in 32% of patients. Vital status was checked and causes of death were obtained in 2011 after a mean follow up of 9.6 years. The expected cardiovascular mortality was calculated by applying the SCORE equation for high risk populations on the basis of the level of risk factors in the total population, in the diabetic and non-diabetic population and was compared with the observed mortality in each group. Correction factor was calculated for each group. Univariate analysis was used for statistical analysis. The optimum threshold of SCORE, allowing for an optimal sensitivity and specificity, was determined by the ROC curve (receiver operating characteristic). For risk thresholds 5% and that determined from the ROC curve of the European SCORE sensitivity, specificity values were calculated.

Results: The total number of cardiovascular death at 10 years is 18 with a mortality of 12.3%. The average of SCORE in our population was 8.73+/-5.12% with extremes ranging from 1 to 32%. The European SCORE was strongly correlated in our cohort to the occurrence of cardiovascular death at 10 years (p <0.0001). The correction factor of SCORE is calculated to 2.7 in diabetic group, 1 in non-diabetic group and 1.4 for the total population.

The ROC curve has a c index (AUC) = 0.73 corresponding to the risk threshold of 9.12%. The relative risk of cardiovascular death at 10 years of SCORE for the 9.12% threshold is calculated at 3.6. For the risk threshold for 9.12%, sensitivity was calculated at 66.7% and specificity at 68.8%. For the risk threshold for 5%, sensitivity was calculated at 94.9% and specificity at 17.96%.

Conclusion: SCORE is validated in coronary male Tunisian patients with and recalibrated using correction factors. Validation on a larger population and multi-ethnic remains our future desire.